

COLEGE OF BUSINESS

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4. The method as recited in claim 2, further comprising:

generating a custom advertisement in response to receiving said advertisement request message, said custom advertisement is generated according to said portion of the first service's capabilities that said capability credential indicates the client is allowed to access; and

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sending an advertisement request response message to the client, wherein said advertisement request response message includes said custom advertisement as said access interface document.

10 5. The method as recited in claim 4, wherein said custom advertisement specifies an XML schema defining messages to be sent by the client to the first service and messages to be sent from the first service to the client to use said portion of the first service's capabilities.

15 6. The method as recited in claim 1, further comprising the client receiving a protected advertisement for the first service, wherein said protected advertisement provides an address to request said security credential, but does not provide said access interface document to access the first service.

20 7. The method as recited in claim 6, further comprising the client sending a request for said security credential to the address from said protected advertisement, wherein said request for said security credential includes an indication of a set of desired capabilities for the first service.

25 8. The method as recited in claim 7, wherein said address from said protected advertisement is for an authentication service that determines a level of capabilities of the first service that client is authorized to access and generates said security credential to grant access for the client to said portion of the first service's capabilities.

9. The method as recited in claim 8, wherein said portion of the first service's capabilities is the lesser of said level of capabilities and said set of desired capabilities.

10. The method as recited in claim 8, wherein said receiving a capability credential
5 comprises receiving said capability credential from said authentication service.

11. The method as recited in claim 6, wherein said protected advertisement further provides an address to request said access interface document to access the first service, wherein said using said capability credential to request an access interface comprises sending an advertisement request message to said address to request said access interface document.

12. The method as recited in claim 6, wherein said receiving a protected advertisement comprises receiving said protected advertisement from a space service, wherein said space service comprises protected advertisements for a plurality of services including the first service, wherein each protected advertisement specifies an address for request a security credential to allow access to a corresponding service.

13. The method as recited in claim 1, wherein said access interface document
20 comprises a schema defining messages for accessing said portion of the first service's
capabilities, wherein said using the interface from said access interface document to
access a capability comprises sending a message according to said schema to the first
service.

25 14. The method as recited in claim 13, wherein said message includes said capability credential, the method further comprising the first service using said capability credential to authenticate said message as from the client.

15. The method as recited in claim 1, wherein said access interface document
30 comprises a message schema defining messages for accessing said portion of the first

service's capabilities, wherein said using the interface from said access interface document to access a capability comprises the client using said access interface document to construct a message gate for sending messages to the first service, wherein the message gate embeds said capability credential in each message.

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16. The method as recited in claim 15, wherein the message gate checks each message for compliance with said message schema.

17. The method as recited in claim 16, wherein said message schema is an XML
10 schema.

18. A client device, comprising:

a connection to a distributed computing environment;

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an interface coupled to said connection and configured to receive over the connection a capability credential, wherein said capability credential indicates that a client on the client device is allowed to access a portion of a first service's capabilities;

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wherein the interface is further configured to use said capability credential to request an access interface document to access the first service;

wherein the interface is further configured to receive said access interface
25 document over the connection, wherein said access interface document comprises an information for accessing only said portion of the first service's capabilities; and

wherein the interface is further configured to use the information from said access interface document to access over the connection a capability from said portion of the first service's capabilities.

5 19. The client device as recited in claim 18, wherein the interface is configured to use said capability credential to request an access interface document by sending an advertisement request message in a data representation language, wherein said advertisement request message includes said capability credential.

10 20. The client device as recited in claim 19, wherein said data representation language is eXtensible Markup Language (XML).

21. The client device as recited in claim 19, wherein the interface is further configured to receive an advertisement request response message including a custom advertisement, wherein said custom advertisement is generated according to said portion of the first service's capabilities that said capability credential indicates the client is allowed to access.

22. The client device as recited in claim 21, wherein said custom advertisement specifies an XML schema defining messages to be sent by the client to the first service and messages to be sent from the first service to the client to use said portion of the first service's capabilities.

23. The client device as recited in claim 18, wherein the interface is further configured to receive a protected advertisement for the first service, wherein said protected advertisement provides an address to request said security credential, but does not provide said access interface document to access the first service.

24. The client device as recited in claim 23, wherein the interface is further configured to send a request for said security credential to the address from said protected

advertisement, wherein said request for said security credential includes an indication of a set of desired capabilities for the first service.

25. The client device as recited in claim 24, wherein said address from said protected advertisement is for an authentication service that determines a level of capabilities of the first service that client is authorized to access and generates said security credential to grant access for the client to said portion of the first service's capabilities.

26. The client device as recited in claim 25, wherein said portion of the first service's capabilities is the lesser of said level of capabilities and said set of desired capabilities.

27. The client device as recited in claim 25, wherein the interface is configured to receive said capability credential from said authentication service.

28. The client device as recited in claim 23, wherein said protected advertisement further provides an address to request said access interface document to access the first service, wherein the interface is configured to use said capability credential to request an access interface document by sending an advertisement request message to said address to request said access interface document.

29. The client device as recited in claim 23, wherein the interface is configured to receive said protected advertisement from a space service, wherein said space service comprises protected advertisements for a plurality of services including the first service, wherein each protected advertisement specifies an address for request a security credential to allow access to a corresponding service.

30. The client device as recited in claim 18, wherein said access interface document comprises a schema defining messages for accessing said portion of the first service's capabilities, wherein the interface is configured to use the information from said access

interface document to access a capability by sending a message according to said schema to the first service.

31. The client device as recited in claim 30, wherein said message includes said capability credential so that the first service may use said capability credential to authenticate said message as from the client.

32. The client device as recited in claim 18, wherein said access interface document comprises a message schema defining messages for accessing said portion of the first service's capabilities, wherein the interface is configured to use the information from said access interface document to access a capability by using said access interface document to construct a message gate in the client device for sending messages to the first service, wherein the message gate embeds said capability credential in each message.

33. The client device as recited in claim 32, wherein the message gate is configured to check each message for compliance with said message schema.

34. The client device as recited in claim 33, wherein said message schema is an XML schema.

35. A carrier medium comprising program instructions, wherein the program instructions are computer-executable on a client device to implement:

receiving a capability credential, wherein said capability credential indicates that a client within the client device is allowed to access a portion of a first service's capabilities;

using said capability credential to request an access interface document to access the first service;

receiving said access interface document, wherein said access interface document comprises an interface for accessing only said portion of the first service's capabilities; and

5 using the interface from said access interface document to access a capability from said portion of the first service's capabilities.

36. The carrier medium as recited in claim 35, wherein said using said capability credential to request an access interface document comprises sending an advertisement request message in a data representation language, wherein said advertisement request message includes said capability credential.

37. The carrier medium as recited in claim 36, wherein said data representation language is eXtensible Markup Language (XML).

38. The carrier medium as recited in claim 36, wherein the program instructions are computer-executable on the client device to further implement:

receiving, in an advertisement request response message, a custom advertisement in response to sending said advertisement request message, wherein said custom advertisement is generated according to said portion of the first service's capabilities that said capability credential indicates the client is allowed to access.

39. The carrier medium as recited in claim 38, wherein said custom advertisement specifies an XML schema defining messages to be sent by the client to the first service and messages to be sent from the first service to the client to use said portion of the first service's capabilities.

40. The carrier medium as recited in claim 1, wherein the program instructions are computer-executable on the client device to further implement receiving a protected advertisement for the first service, wherein said protected advertisement provides an address to request said security credential, but does not provide said access interface document to access the first service.

41. The carrier medium as recited in claim 40, wherein the program instructions are computer-executable on the client device to further implement sending a request for said security credential to the address from said protected advertisement, wherein said request for said security credential includes an indication of a set of desired capabilities for the first service.

42. The carrier medium as recited in claim 41, wherein said address from said protected advertisement is for an authentication service that determines a level of capabilities of the first service that client is authorized to access and generates said security credential to grant access for the client to said portion of the first service's capabilities.

43. The carrier medium as recited in claim 42, wherein said portion of the first service's capabilities is the lesser of said level of capabilities and said set of desired capabilities.

44. The carrier medium as recited in claim 42, wherein said receiving a capability credential comprises receiving said capability credential from said authentication service.

45. The carrier medium as recited in claim 40, wherein said protected advertisement further provides an address to request said access interface document to access the first service, wherein said using said capability credential to request an access interface comprises sending an advertisement request message to said address to request said access interface document.

